

WHAT IS CLAIMED IS:

1. A method for providing a dithered image in a digital light processing system, comprising:

transmitting a first light beam from a first light-emitting diode (LED) at a first wavelength and a second light beam from a second LED at a second wavelength, the first wavelength spectrally proximate the second wavelength;

receiving the first and second beam at a digital micromirror device (DMD);

selectively passing a first portion of the first beam and a second portion of the second beam received by the DMD along a projection path;

receiving the first and second portion of the first beam at a dithering element; passively passing the first portion of the first beam along the projection path and the second portion along an offset path; and

directing the first portion and second portion on to a screen to provide a dithered image.

2. The method of Claim 1, the first LED comprising a first red LED, the second LED comprising a second red LED, the light source further comprising a first green LED transmitting at third peak wavelength, a second green LED transmitting at a fourth peak wavelength spectrally proximate the third peak wavelength, and a blue LED transmitting at a fifth peak wavelength, each peak wavelength disparate from other peak wavelengths.

3. The projector system of Claim 2, the dithering element comprising a dichroic reflector operable to substantially reflect the second and the fourth peak wavelengths.

4. A method for providing a dithered image, comprising:

transmitting a first light beam at a first peak wavelength and a second light beam at a second peak wavelength, the first peak wavelength disparate from the second peak wavelength;

5 selectively passing a first portion of the first beam and a second portion of the second beam received a projection path; and

passively passing the first portion of the first beam along the projection path and the second portion along an offset path.

10 5. The method of Claim 4 further comprising directing the first portion and second portion on to a screen to provide a dithered image.

15 6. The method of Claim 4, the light source comprising a first red LED transmitting at the first peak wavelength and a second red LED transmitting at the second peak wavelength, the first peak wavelength spectrally proximate the second peak wavelength.

20 7. The method of Claim 4, the light source comprising a first green LED transmitting at the first peak wavelength and a second green LED transmitting at the second peak wavelength, the first peak wavelength spectrally proximate the second peak wavelength.

25 8. The method of Claim 4, the light source comprising a first blue LED transmitting at the first peak wavelength and a second blue LED transmitting at the second peak wavelength, the first peak wavelength spectrally proximate the second peak wavelength.

9. The method of Claim 4 further comprising receiving the first and second light beam at a DMD.

10. The method of Claim 4 further comprising receiving the first and second portion at a dithering element.

5 11. The method of Claim 10, the dithering element comprising a dichroic reflector operable to substantially reflect the second portion of the second beam within a wavelength range and an optical mirror to receive the substantially reflected second portion of the second beam and reflect the substantially reflected second portion along an offset path.

10 12. The method of Claim 11, the dichroic reflector operable to substantially reflect incident light within a first and a second wavelength range, the first wavelength range disparate from the second wavelength range.

13. A projector system for providing a dithered image, comprising:

a light source capable of transmitting at least a first light beam at a first peak wavelength and a second light beam at a second peak wavelength, the first peak wavelength disparate from the second peak wavelength;

5 a spatial light modulator operable to receive the first beam and the second beam and selectively pass a first portion of the first beam and a second portion of the second beam along a projection path; and

a dithering element operable to receive the first portion and the second portion and to passively pass the first portion along the projection path and the second portion along an offset path.

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14. The projector system of Claim 13 further comprising a screen operable to display the first portion and the second portion, the first displayed portion overlaps the second displayed portion by a fraction of a pixel.

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15. The projector system of Claim 13, the light source comprising a first red LED transmitting at the first peak wavelength and a second red LED transmitting at the second peak wavelength, the first peak wavelength spectrally proximate the second peak wavelength.

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16. The projector system of Claim 13, the light source comprising a first green LED transmitting at the first peak wavelength and a second green LED transmitting at the second peak wavelength, the first peak wavelength spectrally proximate the second peak wavelength.

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17. The method of Claim 13, the light source comprising a first blue LED transmitting at the first peak wavelength and a second blue LED transmitting at the second peak wavelength, the first peak wavelength spectrally proximate the second peak wavelength.

18. The projector system of Claim 15, the light source further comprising a first green LED transmitting at a third peak wavelength, a second green LED transmitting at the fourth peak wavelength spectrally proximate the third peak wavelength, and a blue LED transmitting at a fifth peak wavelength, each wavelength  
5 disparate from other wavelengths, the third peak wavelength proximate the fourth peak wavelength.

19. The projector system of Claim 13, the spatial modulator comprising a DMD.  
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20. The projector system of Claim 13, the dithering element comprising a dichroic reflector operable to reflect at least a portion of light beams within a wavelength range.

15 21. The projector system of Claim 20, the dithering element further comprising an optical mirror operable to receive the reflected portion of light beams and reflect the reflected portion along the offset path.

20 22. The projector system of Claim 20, the dichroic reflector operable to substantially reflect incident light within a first and a second wavelength range, the first wavelength range disparate from the second wavelength range.